

What is claimed is:

1. An optical transmission WDM-system comprising a transmitting side and a receiving side and an optical fiber link connecting the transmitting and receiving sides, high-priority information being transmitted in the optical fiber link from the transmitting side to the receiving side in a plurality of wavelength bands, the wavelength bands having different transmission characteristics and transmission characteristics varying with time, in particular different polarization mode dispersions and/or polarization mode dispersions varying with time, the WDM-system further comprising a switch for transmitting the high-priority information in a number of the wavelength bands which is smaller than the total number of wavelength bands and a controller connected to the switch for at each instant selecting the wavelength bands used for transmitting the high-priority information to give a sufficient total quality of the transmission of the high-priority information.

2. The optical transmission WDM-system according to claim 1, further comprising a quality determining device connected at the receiving side for determining the quality of transmission in each of the wavelength bands and for providing a signal representing determined quality values to the control means.

3. An optical transmission WDM-system according to claim 1, wherein the switch comprises cross-connect elements, a first cross-connect element connected at the transmitting side and a second cross-connect element connected at the receiving side, the first cross-connect element having one output terminal for each of the plurality of wavelength bands and the cross-connect element having one input terminal for each of the plurality of wavelength bands.

4. An optical transmission WDM-system according to claim 3, wherein the cross-connect elements are arranged to switch electrical signals.

5. An optical transmission WDM-system according to claim 3, wherein the cross-connect elements are arranged to switch optical signals.

6. An optical transmission WDM-system according to claim 1, wherein the switch on the transmitting side comprises tuneable electro-optical transmitters.

7. An optical transmission WDM-system according to claim 1 for also transmitting low-priority information on the optical fiber link, wherein the controller is arranged to select the wavelength channels not used for transmitting the high-priority information for transmitting the low-priority information.

8. An optical transmission WDM-system according to claim 1, further comprising compensators for compensating polarization mode dispersion arranged for each wavelength channel used and connected at one end of the fiber optical link.

9. A method of transmitting in a plurality of wavelength bands high-priority information over an optical fiber link connecting a transmitting side to a receiving side, comprising the steps of:

transmitting light signals in the optical fiber link in the wavelength bands, the wavelength bands having different transmission characteristics and transmission characteristics varying with time, in particular different polarization mode dispersions and/or polarization mode dispersions varying with time, and

selecting at each instant wavelength bands for transmitting the high-priority information, the number of the selected wavelength bands being smaller than the total number of wavelength bands, using only the selected wavelength bands for transmitting the high-priority information in the optical fiber link the selecting of the wavelength bands being made to give a sufficient total quality of the transmission of the high-priority information.

10. A method according to claim 9, comprising the additional steps of determining, at the receiving side, values representing the quality of transmission in each of the wavelength bands and using the determined value in the selecting of wavelength bands.

11. A method according to claim 9, wherein in the step of selecting, at the transmitting side, incoming electrical signals arriving at electrical input lines are switched to the selected wavelength bands and, at the receiving side, the signals received in the selected wavelength bands are switched to electrical output lines carrying electrical output signals.

12. A method according to claim 11, wherein the switching in at least one of the transmitting and receiving sides is made by switching electrical signals.

13. A method according to claim 11, wherein the switching in at least one of the transmitting and receiving sides is made by switching optical signals.

14. A method according to claim 9, wherein the step of selecting, at the transmitting side, the wavelength bands are selected by controlling tuneable optical transmitting elements.

15. A method according to claim 9, comprising the additional step of compensating polarization mode dispersion for each wavelength channel used, the compensating being made at one end of the fiber optical link.